

presented because they are made in response to arguments raised in the Final Rejection. Entry of the amendments is thus respectfully requested.

**I. The Claims Satisfy the Requirements of 35 U.S.C. §112, Second Paragraph**

The Office Action rejects claims 1-4, 6 and 7 under 35 U.S.C. §112, second paragraph, as indefinite. Claim 1 is amended to obviate the rejection. Withdrawal of the rejection under 35 U.S.C. §112, second paragraph, is respectfully requested.

**II. The Claims Define Allowable Subject Matter**

The Office Action rejects claims 1-4 and 6 under 35 U.S.C. §103 as unpatentable over U.S. Patent No. 4,739,204 to Kitamura et al. (hereinafter "Kitamura") in view of U.S. Patent No. 5,965,965 to Umeda et al. (hereinafter "Umeda 965") and further in view of U.S. Patent No. 6,137,201 to Umeda et al. (hereinafter "Umeda 201"); and claim 7 under 35 U.S.C. §103 as unpatentable over Kitamura in view of Umeda 965 and further in view of Umeda 201 and still further in view of *Electric Machinery and Transformers* (hereinafter "*Electric Machinery*"). The rejections are respectfully traversed.

Claim 1 recites that the liquid passage is disposed between the inner periphery and the outer periphery of the frame, and the liquid passage is disposed near the joint coil end. This claim feature provides advantages. For example, because the liquid passage is formed in the wall of the frame (between the inner periphery and the outer periphery thereof), no additional sealing member, such as the gasket 27 of Kitamura, is necessary.

This claim feature is clearly supported in the rest of the disclosure. For example, the "joint coil end" means the front coil end 36 that forms a joint 33d shown in Fig. 1. Because the joint coil end is disposed near the liquid passage, excessive temperature rise of the joint coil end can be suppressed by the cooling liquid near the joint coil.

Kitamura as well as the rest of the applied art does not disclose the above feature or advantage.

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The claims added by this amendment are also distinguishable over the applied art. For example, in claim 10, the frame is recited as having a first frame portion and a second frame portion, and the first frame portion has the liquid passage. Therefore, the liquid passage is automatically disposed near the joint coil end that is formed at the first core end.

For at least these reasons, its is respectfully submitted that the claims are distinguishable over the applied art. Withdrawal of the rejections under 35 U.S.C. §103 is respectfully requested.

### III. Conclusion

For at least the reasons discussed above, it is respectfully submitted that this application is in condition for allowance.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,



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Attachments:

Appendix  
Petition for Extension of Time

Date: July 30, 2002

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DEPOSIT ACCOUNT USE AUTHORIZATION Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461
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## APPENDIX

## Changes to Claims:

Claims 8-10 are added.

The following is a marked-up version of the amended claim:

1. (Twice Amended) A liquid-cooled vehicle rotary electric machine operable in a motor mode or a generator mode, comprising:

a frame having an inner periphery, an outer periphery and a liquid passage that is disposed between said inner periphery and outer periphery;

a stator core having an outer periphery fixedly fitted to said inner periphery of said frame, opposite core ends and a plurality of slots;

a multi-phase stator winding accommodated in said plurality of slots, said stator winding including a plurality of U-shaped conductor segments each of which has a pair of legs each of which is inserted in a slot and connected to another at one of said core ends to form a joint coil end; and

a rotor rotatably supported by said frame and disposed inside said stator core so as to electro-magnetically connect said stator core;

~~wherein~~

~~\_\_\_\_\_ said stator winding comprises a plurality of insulated U-shaped conductor segments each of which has a pair of legs, and~~

~~\_\_\_\_\_ each of said legs is inserted in a slot from one end of said stator core and connected to be paired to another at a portion extending from the other end of said stator,~~

wherein:

~~\_\_\_\_\_ said liquid passage is disposed near said joint coil end.~~

said rotor has a plurality (P) of different magnetic poles alternately disposed at prescribed intervals in the circumferential direction thereof,

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said plurality of slots is disposed in said stator to increase contact area of said U-shaped conductor segments with slot inner walls, and

the number (~~n~~) of said slots is equal to or larger than two times as many as the product of the number (~~p~~) of said magnetic poles and the number (~~m~~) of the phase of said stator, that is:  $n \geq 2 \times p \times m$ .